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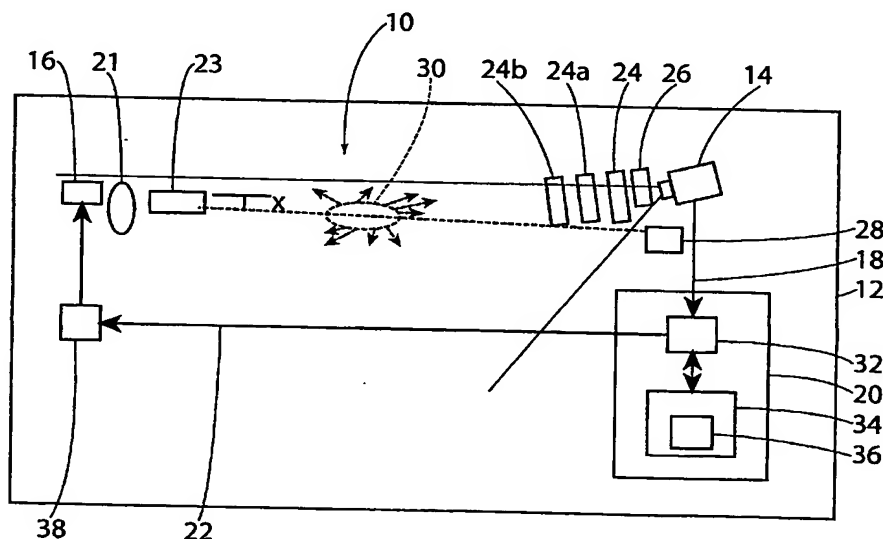
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(54) Title: PARTICLE DETECTOR



(57) Abstract: A smoke detector (10) is disclosed which uses a beam of radiation such as a laser (16), to monitor a region, such as a room (12). A camera (14) is used to capture images of part of the room (12), including a path of the laser beam. Particles in the laser beam scatter light (30), and this is captured by the camera (14) for analysis. A processor (20) extracts data relating to the scattered light (30) to determine the density of particles in the beam, to determine the level of smoke in the region. The laser may have a modulated output (38) so that images captured without the laser can be used as a reference point and compared to images taken with the laser on, to assist in determining the level of scattered light (30) compared to ambient light. Filters (24, 26) may be used to decrease signals generated from background light.



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